AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A system for accessing and transmitting different data frames in a digital transmission network, for accessing and transmitting different data frames, [[said]] the system comprises:

at [[At]] least [[a]] one user-network interface (UNI), which is used to couple coupled with [[the]] a subscriber's network; and/or at least a network-network interface (NNI), which is used to couple coupled with [[said]] the digital transmission network to transfer data; and

a [[A]] data converting device, coupled with [[said]] the UNIs and the [[said]] NNIs, which is used configured to convert data formats between [[said]] the UNIs or data formats between [[said]] the NNIs or data formats between [[said]] the UNIs and [[said]] the NNIs;

[[Said]] the data converting device comprises a virtual bridge device and [[an]] a virtual interface device, the virtual interface device coupled to the UNI and the NNI, the virtual bridge device comprises:

an inter-device interface configured to input and output data frames;

a virtual bridge processing unit, coupled with the inter-device interface to process data;

a database, coupled with the virtual bridge processing unit for data processing and configured to store information indicative of data types to facilitates the data processing according to data types; and

a control interface unit, coupled with the database and the virtual bridge processing unit so as to control the database and the virtual bridge processing unit, wherein

[[said]] the virtual bridge device switches data between [[said]] the UNIs and/or [[said]] the NNIs, and said virtual bridge device determines whether data frames entering the virtual bridge device are control messages detects control messages, and transmits the control messages

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to an external control system ~~of the device to process~~ for processing via the control interface

unit if the data frames entering the virtual bridge device are control messages[[;]] and switches

data frames if the data frames entering the virtual bridge device are control messages. ~~of message~~

~~except control messages are switched;~~

~~said virtual bridge device comprises: an inter-device interface, which is used to input and~~

~~output data frames; a virtual bridge processing unit, which couples with said inter-device~~

~~interface to process data; a database, which stores information corresponding to types of data and~~

~~couples with said virtual bridge processing unit so as to process data according to said~~

~~information; a control interface unit, which couples with said database and said virtual bridge~~

~~processing unit so as to control them.~~

2. (Currently Amended) A system for accessing and transmitting different data frames

in a digital transmission network according to claim 1, wherein [[said]] the data converting

device comprises a data processing and dispatching device ~~or a virtual interface device~~, [[said]]

the inter-device interface connects with [[said]] the data processing and dispatching device

~~or/and said virtual interface device~~.

3. (Currently Amended) A system for accessing and transmitting different data frames

in a digital transmission network according to claim 1, wherein [[said]] the database comprises a

virtual bridge database, a multicasting database and a forwarding database; [[said]] the

multicasting database and [[said]] the forwarding database store virtual bridge number, virtual

bridge input port, destination address input, Virtual Local Area Network (VLAN) [[VLAN]]

number input, Virtual Metropolitan Area Network (VMAN) [[VMAN]] number input, virtual

bridge output port; [[said]] the virtual bridge database stores type number input, virtual bridge number, port number, type number output.

4. (Currently Amended) A system for accessing and transmitting different data frames in a digital transmission network according to claim 1, wherein [[said]] the control interface unit provides an external control interface and adds, deletes, modifies and searches in [[said]] the database via [[said]] the control interface, and monitors [[said]] the virtual bridge processing unit.

5. (Currently Amended) A system for accessing and transmitting different data frames in a digital transmission network according to claim 1, wherein [[said]] the virtual bridge processing unit processes data frames according to embedded logic and controls formats of forwarding items in the forwarding database, formats of multicasting items in the multicasting database, and formats of items in the virtual bridge database.

6. (Currently Amended) A method of accessing and transmitting different data frames in a digital transmission network through [[the]] a system of claim 1, said system comprises including a virtual bridge device, wherein the virtual bridge device comprises:

an inter-device interface configured to input and output frames;

a data database coupled with the virtual bridge processing unit for data processing and configured to store information indicative of data types to facilitates the data processing according to data types; and

a control interface unit coupled with the database to control the database,

wherein [[said]] the method comprises the following steps:

~~Determining~~ determining whether the data frames entering [[said]] the virtual bridge

device via the inter-device interface are control messages;

[[If]] if they are control messages, transmitting the data frames to [[the]] an external

control system via the control interface unit and ending the process;

[[If]] if they are not control messages, extracting input data type number and destination

address information from the data frames;

~~Searching~~ searching in the database according to the input data type number and

determining whether the retrieval result from the searching is blank;

[[If]] if the retrieval result is blank, discarding the data frames and ending the process;

[[If]] if the retrieval result is not blank, extracting a virtual bridge number and a port

number ~~relevant information~~ from the retrieval result;

~~Determining~~ determining the processing flow according to [[said]] the destination address

information;

[[If]] if the destination address is a multicasting address, performing [[the]] a multicasting

sub-flow, and then ending the process;

[[If]] if the destination address is a broadcasting address, performing [[the]] a

broadcasting sub-flow, and then ending the process;

~~Otherwise going to the next step;~~

~~Searching~~ otherwise, searching in the database according to [[the]] a ~~second~~ rule

~~constituted~~ constructed based on ~~by the obtained~~ information indicative of the ~~input~~ data frames

~~information;~~

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[[If]] if the retrieval result is blank, performing the broadcasting sub-flow or discarding [[said]] the data frames and ending the process;

[[If]] if the retrieval result is not blank, modifying the data frames, and sending [[said]] the modified data frames via the inter-device interface, and then ending the process.

7. (Currently Amended) A method according to claim 6, wherein said step of extracting the input data type number and destination address information from the data frames also comprises a step of extracting source address of input data and Virtual local Area Network (VLAN) [[VLAN]] number.

8. (Currently Amended) A method according to claim 6, wherein the step of searching in the database according to the type information and determining whether the retrieval result is blank further comprises:

Searching in the virtual bridge database with the index of extracted data type number information;

~~The step of extracting relevant information from the retrieval result comprises: extracting the virtual bridge number and port number from the retrieval result;~~ If the retrieval result is not blank, learning the source address and updating the forwarding database according to the learning result.

9. (Currently Amended) A method according to claim 8, wherein the step of searching in the database according to the second rule constituted by the obtained input data information comprises: searching in the forwarding database with the index of the virtual bridge number, port

number, destination address, Virtual Local Area Network (VLAN) [[VLAN]] number as

indexes; [[said]] the second rule is whether the virtual bridge number, port number, destination

address, VLAN number are found.

10. (Currently Amended) A method according to claim 9, wherein the step of modifying

data frames and outputting [[said]] the data frames via the inter-device interface comprises:

extracting output port number information from the retrieval result;

searching in the virtual bridge database with the index of virtual bridge number and

output port number;

determining the retrieval result,

[[If]] if the retrieval result is blank, discarding the data frames and ending the process;

[[If]] if the retrieval result is not blank, extracting output type number information from

the retrieval result and modifying the data frames so as to, i.e., replacing the replace a type

number in the data frames with the output data type number;

Outputting outputting the modified data frames via the inter-device interface.

11. (Currently Amended) A method according to any of claim 6 to 10, wherein [[said]]

the broadcasting sub-flow comprises:

Searching searching in the virtual bridge database for [[the]] a first item, as a retrieval

result, corresponding to [[the]] a virtual bridge [[with]] having an [[the]] index [[of]]

corresponding to the virtual bridge number;

determining based on the retrieval result,

[[If]] if the retrieval result is blank, discarding [[said]] the data frames and ending the sub-flow;

[[If]] if the retrieval result is not blank, comparing the input data type number in the retrieval result with the type number in the data frames;

[[If]] if they the input data type number in the retrieval result and the type number in the data frames are equal, searching in the virtual bridge database for [[the]] a second next item, as a retrieval result, corresponding to [[said]] the virtual bridge with the index of the virtual bridge number, and then returning to determining based on the retrieval result;

[[If]] if they are not equal, copying the data frames, extracting output data type number from the retrieval result and modifying the copied data frames so as to replace (i.e., replacing the type number in the copied data frames with the output data type number), and then outputting the modified copied data frames via the inter-device interface.

12. (Currently Amended) A method according to any of claim 6 to 10, wherein [[said]] the multicasting sub-flow comprises:

With based on the index of the virtual bridge number, input port, destination address, and Virtual Local Area Network (VLAN) [[VLAN]] number, searching in the multicasting database for [[the]] a first item, as a retrieval result, corresponding to these key words;

Determining determining [[the]] based on the retrieval result,

[[If]] if the retrieval result is blank, discarding [[said]] the data frames and ending the sub-flow;

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[[If]] if the retrieval result is not blank, comparing the output port number in the retrieval result with the extracted input port number (i.e., in the virtual bridge database, the input port number corresponding to the data frame type number);

[[If]] if [[they]] the output port number in the retrieval result and the extracted input port number are equal, searching in the multicasting database for a second the next item, as a retrieval result, with the index of the virtual bridge number, input port, destination address, and VLAN number, then returning to determine the based on the retrieval result;

[[If]] if they are not equal, searching in the virtual bridge database with the index of the virtual bridge number and output port number;

[[If]] if the retrieval result is blank, discarding [[said]] the data frames, and searching in the multicasting database for the next item with the index of the virtual bridge number, input port, destination address, and VLAN number, and returning to determining the retrieval result;

[[If]] if the retrieval result is not blank, copying [[said]] the data frames, extracting output type number from the retrieval result, modifying the copied data frames (i.e., replacing the so as to replace a type number in the copied data frames with the output data type number[[)]], and then outputting the modified copied data frames via the inter-device interface.